ARCA RE/MAX SERIES

ARCA SIM RACING
AS REAL AS IT GETS
FIRST EDITION '08

BUMP-DRAFT

BY BOB SIMMERMAN

A RACER'S GUIDE TO "ARCA SIM RACING"

"Bump-Draft"

By BOB SIMMERMAN

A Racer's Guide to "ARCA Sim-Racing"

"I feel like I got a pile of cattle chasing my ass, and I'm peddling as hard as I can to stay in front of 'em. I'm looking behind me driving like hell."
—*Rusty Wallace*

Since its foundation in 1953 by John Marcum, the ARCA (the Automobile Racing Club of America) sanctioning body has enjoyed an enormous growth in popularity while, simultaneously, proving a fertile ground in the development of many of today—and yesterday's—stock car greats. ARCA's major racing competition—the ARCA RE/MAX stock car series—has provided the NASCAR Sprint Cup championship with many of its current (and past) stars: Names like Ryan Newman, Dale Earnhardt, Jr., Tony Stewart, Benny Parsons, and Ken Schrader have all risen through the ranks of the ARCA RE/MAX series.
—*AutoSimSport Magazine*

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Foreword

Thank you for your purchase of *ARCA Sim Racing*, and welcome to the exciting world of ARCA RE/MAX Series racing! You now hold in your hands a truly authentic and realistic representation of one of the country's oldest sanctioned racing series, dating back to 1953 when Jim Romine was crowned ARCA's first-ever Champion.

ARCA Sim Racing is a fully-licensed simulator for the PC which will allow you to take your pick among Chevrolet, Pontiac, Dodge, Ford, and Toyota-branded 800 horsepower offerings, and race them on every circuit on the ARCA calendar. Each car has been intricately laser-scanned for the ultimate in accurate reproduction, and each track has been painstakingly recreated to be not only topographically accurate, but visually accurate too, with full livery and sponsorship details. The simulator also features custom-tuned physics and tire models based on real-world data provided by the Hoosier Tire Company, meaning that each track has a specific model matching their real-world behavior in terms of grip levels. The track surfaces have been fully modeled and feature a level of detail that will fully immerse you within the exciting world of ARCA/REMAX racing: Whether turning a test lap, or battling for position in a race to the wire for the win, we have you covered with the most authentic simulated-racing experience ever created.

Two years in the making, and with over one million miles driven by the beta testers and development team (with over 50,000 laps logged on some tracks!) comes the assurance that what you have in your hands is the most realistic stock car experience to date. With real- world tire data, and aerodynamic and suspension data from several ARCA RE/MAX teams, *ARCA Sim Racing* has covered all the angles (and turns!) and makes for a rich and rewarding experience, both online, and off.

ARCA Sim Racing features industrial-strength multiplayer that ensures the only frustrations you're going to experience are those on the track! *ARCA Sim Racing* also supports broadcasting features straight out-of-the-box, as well as Real-Time scoring plug-ins available via download. *ARCA Sim Racing* allows you to enable driving aids to get started, or to leave them off for a truly authentic racing experience. And who knows, with enough practice, you just might be the next Frank Kimmel, nine-time series Champ'!

We hope you enjoy your purchase, and make sure to stop by the Sim Factory website often for the latest information on developments and enhancements for *ARCA Sim Racing*.

—The Sim Factory Crew

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General Motors - GM® - Chevrolet & Pontiac
Ford® Motor Company
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Chapter One: Getting Started

Features

ARCA Sim Racing is feature-rich and sports some of the best car and track modeling ever created for a commercially-available simulator.

—Fifteen Degrees of Freedom (DOF) physics model

—Tire data provided by the Hoosier Tire Company, obtained by Calspan, and integrated into a track-specific physics and tire modeling system, further enhanced by Active Grip Technology (AGT) that accurately depicts differences in grip level and handling similar to what the real series' drivers experience

—Advanced Suspension Modeling provides for realistic handling and detailed setup options, complete with fender-flare modeling and Real-Time corner weight display. Also features a quick setup option for those in a hurry

—Detailed aerodynamics modeling with Active Rear End (ARE) for realistic representations of drafting and handling changes due to aerodynamic effects

—Simulated head movement and cockpit vibrations

—Laser-scanned car models for unprecedented realism and accuracy

—Advanced DirectX 9 graphics engine with Real-Time night and day transitions

—Detailed bump modeling—no billiard-table tracks here

—Fully-functional track scoring towers featuring Real-Time updates

—Gut-bending sound featuring the Miles Sound System

—Export replays to AVI with adjustable compression options

—Enhanced replay system and several realistically placed camera angles

—Industry-leading netcode fully integrated for a robust and dynamic multiplayer experience

—Race statistics automatically reported to SimStatsLive, allowing the driver to keep close track of their virtual career. With SimStatsLive, you can join or view race details from the main interface, search through past races, download XML race results, view an integrated ranking system utilizing driver statistics, as well as server and user browsing capabilities

—Feature-rich admin' and client environment with Buddy Lists, built in IRC chat, Boot or Ban capability, Spectator mode for spotter duties or viewing, security checks to combat cheating, and fully-functional and implemented ARCA RE/MAX Series rules

—Powerful League Tools feature set in an in-game Admin Panel for total race control, and ARCA Hotlaps Plug-In, a Real-Time scoring module with live web exports (available as a download only)

System Specifications: Minimum Spec'

The complexity and detail of *ARCA Sim Racing* is such that the computer should meet, at a minimum, the following specifications:

2.0 GHz processor

Windows XP/Vista, XP 64 (Windows 98SE, Windows Me, and Windows 2000 not supported)

512 MB RAM

GeForce 6800 or Radeon 9600, (older cards may work but at degraded performance)

128 MB video RAM

DirectX 9.0c

2.0 GB of hard drive space for installation

Internet connection required for online play

For a top of the line ride, the following specifications are recommended.

System Specifications: Recommended Spec'

Testing has proven that a motherboard with the Nvidia NForce 680 Sli Chipsets, paired with the 8800 Series GeForce Video card by Nvidia provides the best high-end results for users wishing to run everything on maximum settings and at high resolutions.

—*The Sim Factory Development Team*

Intel Core 2 Duo E6600 processor or AMD Equivalent

Windows XP/VISTA

2.0 GB RAM

GeForce 8600GT/8800GT Optimal or Radeon X1900 GT and higher
256 MB video RAM
DirectX 9.0c
2.0 GB of hard drive space for installation
For online racing a high speed Internet connection is recommended.

Now, don't worry too much if you don't have the latest and greatest in terms of hardware—*ARCA Sim Racing* features fully adjustable graphics and performance settings in-game that will allow the user to strike the perfect balance between the eye candy we all love so much, and the ever important frame rate. See the Menus and Interface section for further details on the specific settings that have the greatest impact on performance, as well as optimization tips.

Installation

Insert the *ARCA Sim Racing* DVD into your drive and select 'Install' when prompted. Make sure to shut off any non-necessary background applications such as virus checkers or background utility programs as they can often interfere with successful installation. Accept the creation of the desktop icon for *ARCA Sim Racing*.

Following installation, double click on the *ARCA Sim Racing* icon on the desktop to launch the program. At first start, the 'Configuration' program will initiate and prompt you to adjust several graphics options. After you have selected your preferences, click the 'Next' key to begin the program. Subsequent launches of the simulator will not display this configuration utility: However, should you find it necessary to tinker with your settings, you can find this option in the root directory of *ARCA Sim Racing*.

Fire It Up!

After the intro sequence, you will be presented with a 'Name Entry' form. The name you enter here will also be your online name, so keep that in mind that you should seek a bit of privacy in your online endeavors.

This is your 'Driver Profile', and every setting and selection will be saved and unique to this profile. Subsequent game launches will not bring up the driver creation window: However, should you deem it necessary to create a new profile, you can find the 'Driver Profile Creation' option in-game.

Menus And Interface

There are several option tabs immediately visible—'Game Settings', 'User Profiles', 'Media Center', 'Showroom', 'Test Session', 'Race Weekend', 'Race Online', and 'Exit Program'. The *ARCA Sim Racing* experience is fully customizable, from controller setup to frame-rate locking, so let's take a closer look shall we …

Game Settings

There are four sub-menus in 'Game Settings', and chances are whatever you're looking for you'll find here.

Game Settings—Controls

One of the most important things you will do before turning a lap will be setting up your controller. After selecting the 'Controls' button, several options will appear. Mapping (that is, assigning a button to a control) allows you to have any axis, button, or key activated by the command of your choice. For example, if you have a shifter, you can select the 'First Gear' key, then shift into first and *bam*—you are now all set up to shift. Of course, the rest of the gears, the clutch, the brake pedal, the, well, you get the picture—pretty much anything can (and should) be assigned here.

Those fortunate enough to have steering wheels with a few extra buttons find themselves able to really go for the ultimate control configuration by mapping the ignition and starter switches as well as the pit stop activation control. This is a powerful feature, and a few extra minutes spent here will not go unrewarded: There are several commands such as camera controls and views that, by default, are not mapped to any key or default location. Make sure to take a good look, as it is definitely worth the extra effort. Also worth a quick glance is the 'Calibration' window where you can double check that your axes (such as accelerator, wheel-turn, brake, and clutch

parameters) are working right. There is also an adjustment for tuning the steering wheel range. *ARCA Sim Racing* allows you to save any number of specific controller settings, and recall them at any time, should you find it necessary.

If you are using a keyboard for control, the 'Rates' settings allows you to fine-tune—or de-tune—the behavior of an on/off type of key press situation. While *ARCA Sim Racing* can be enjoyed with the keyboard, it is highly recommended that a wheel and pedal setup of some type is used.

The 'Controller 1' and 'Controller 2' selections enable the user to fine-tune the sensitivity and dead-zone regions of their particular controller (or controllers, depending on how many are plugged in). One is plenty, however, so don't worry about a backup plan! Each controller axis is individually adjustable for maximum control and customization.

The 'Force Feedback' selection controls the Force-Feedback parameters for your particular controller, provided that you control system supports it. Straight from the *ARCA Sim Racing* beta team, the following values are recommended:

—FFB Type-Wheel
—FFB Effects—Full
—FFB Strength—(-100%)

Naturally, there has been quite a bit of speculation by many of us as to what a driver really 'feels' through the steering wheel in terms of road feedback. Certainly, the chassis communicates bumps and undulations of the racing surface to the driver due to the fact they are, for all intents and purposes, a part of the chassis due to the rigorous safety device known as the 'seat belt' (not a conventional seatbelt, of course, but one that is secured at more than one location around the driver with the intention being to keep the driver as motionless as possible), thereby making the driver practically another part of the chassis.

The steering wheel, however, is aided by a power assist system not unlike those found in pretty much every passenger car on the road today. As a result, not a lot of driver input—provided the car is not all over the road—is required to change direction, nor is there a great deal of road feedback being felt. It sounds extremely counter-intuitive—heck, my little G6 (and Former Monte Carlo) communicated road bumps and what not just fine—but that is what the real drivers are telling us: There isn't that much feedback, and, in fact, the Force-Feedback many of us are used to is not quite the way it really is inside an actual race car.

Of course, in a stock car, there is resistance when steering inputs are made, power steering or not, since it takes a bit of muscle to haul a 3,500lbs stock car around the banking at Daytona, but it is nowhere near the effort required when, back in the 'old days', there was no power assist, and drivers often chose a higher racing line as that required less effort than hugging the inside turn of a fast oval like Charlotte, or Atlanta in a 1967 Chevy of Some Sort.

The Sim Factory, however, recommends the following if you're a purist: That the Force-Feedback setting is turned completely off, and the centering spring force is used instead. You can configure this in your 'Windows Controller' setup utility. This setting should deliver a feel about as close as you can get to a real stock car.

But, as always, it is all up to you—*ARCA Sim Racing* is all about bringing you the most realistic stock car racing experience to date … *on your terms*. Don't be afraid to experiment, you won't break anything! And don't forget to visit the official forums for news, tips, hints, and answers to any of your questions.

Game Settings—Graphics/Audio
Selecting the Graphics/Audio tab will bring up a menu with several settings. The settings are, for the most part, self-explanatory, but a couple bear closer attention as they have a large impact on frame rate. Frame rate is not only important for a smooth visual appearance, but for proper car control as well—should the frame rate begin to drop, lag can occur causing a delay in steering inputs by the driver. With this in mind, if you are having trouble getting a solid and steady 30 frames per second, try reducing the shadows and shadow blur settings first. *You* may not notice the difference, but your computer sure will! In the lower right hand corner of this window are further tips on optimization.

Game Settings—Difficulty

This screen allows the user to configure the difficulty and AI behavior of *ARCA Sim Racing*. The options are, again, self-explanatory. You can also select a global difficulty level with the selector at the top of the screen. For the full-on simulator experience, leave the aids turned off. It may be difficult at first to drive quickly, but after some practice and familiarity with the setup adjustment options, you will be picking up speed in no time. Adjust the AI difficulty as desired. Personally, I like to set the AI, do a few laps at a track I know well, and compare my times to them. With a default setup, my intention is that the AI be approximately 0.5 to 1.0 seconds quicker than I am. My intention is also to close that gap with the proper practice time and setup adjustments. Of course, you can choose any setting you wish, and with the fine nature of the adjustment slider, getting the perfect AI speed that you seek is fairly straightforward.

The AI is also quite 'race able', and, given enough on-track practice with them, will provide for very competitive offline racing. However, keep in mind that no AI is perfect, and that the odd smash is no doubt bound to happen. A great way of getting to know the AI is to simply select the TV camera view and watch them. Watch how they approach certain parts of the track—whether it be a lone entry into the high banks of Daytona, or a heart stopping dive into turn one with cars inside and outside at the Irish Hills of Michigan International Speedway. Once I have had a look at how the AI is behaving at a particular track—and speed/aggression setting—I head out to the track. I mentioned earlier that I like the AI a bit faster than me when I am hitting a track for the first time, but for this exercise, I like the AI to be a bit slower than myself as it will provide for the opportunity to mix it up at my leisure. And that is exactly what I try to do, position myself around an AI car, or cars, and stay with them for as long as I can; that is, race with them, not just follow them. Sort of like formation flying in a military jet, I find that the more I do this, the easier it is for me to deal with whatever the AI may throw my way, and, just like their real world counterparts, the AI are not immune from bad decisions—or bad luck!

While nothing beats the online experience for truly human competition, with a bit of tender loving care and practice, racing the offline AI provides for a lot of fun, and definitely helps with your online exploits; as you learn how to deal with the AI, you will find it much easier to deal with those human enemies as well! Test laps on an empty track are extremely important, but it doesn't hurt to have a bit of the unknown thrown into the mix as it may prepare you for the unexpected at a critical moment on the track during your online career. Remember, a quick car is worthless if it can't deal with traffic.

Game Settings—Multiplayer

ARCA Sim Racing boasts one of the most stable, feature rich, and easy to use multiplayer components to be found anywhere in the industry, and from this screen you can make several adjustments. Let's take a quick tour: 'Connection Type', is what you'll be using to connect to the internet (and races), 'Upload Rating' is used primarily for hosting races, 'Download Rating', and the 'SimStatsLive' reporting toggle are all set from this screen.

'SimStatsLive' is a tool that you will use should you wish to post your online race results to the SimStatsLive system. SimStatsLive is a powerful enhancement to the online experience, and definitely worth checking out. See the SimStatsLive section below for more information.

Once you have made your selection settings at the Multiplayer screen, they will be enforced when you make the selection to race online from the main game interface screen.

User Profiles

This screen displays information about the currently selected driver profile, including lap records, and laps run on a per-track per session basis. Optionally, you can enter further details about the particular profile in the spaces available. New profiles can be created at any time, but all settings will need to be adjusted from their default values as the new driver is created.

Media Center

This screen provides adjustment options for the replay system. Replay recording can be turned on or off, and the length of the replay can be adjusted as well. The 'Replay Fidelity' represents the level of detail that will be obtained during recording. This setting will not, however, have any effect on the graphical appearance during actual game play; rather, it is simply a way to ensure smooth playback. The window at the lower left is a listing of all replays recorded, and

by clicking on one of them, you can view the complete details of that particular race, session, or hot lap such as how many drivers competed, the time and date of the replay, the replay length and other information unique to that particular file. You can also rename or delete any of the replays at any time.

Showroom

From this screen, you can select which car you wish to drive. Some of the cars have alternate paint schemes, selectable by toggling the option selector at the lower left of the screen. For a better look at the laser-scanned precision models, select the showroom button for a full-screen view. Using the left mouse button, you can move the model completely around, including a great top-down perspective. And rest assured—all of those gizmos and gadgets seen through the front windscreen are on the real cars, and in the correct locations.

Test Session

From this screen, you can select to run a test session at the track of your choice. Depending on how you setup the 'Private Test Session' toggle in the 'Difficulty' screen, you will either be alone, or have some company. Practice makes perfect, and in order to get the full extent of the *ARCA Sim Racing* experience, you will need to turn more than a few test laps. Certainly, each track is different in terms of size, layout, and topography, but The Sim Factory has also modeled the differences in grip at each track that also come into play.

A freshly paved Talladega, for instance, is going to stick like glue, but a never-been-repaved Daytona is most definitely going to present the driver with a grip situation vastly different than that of the smooth blacktop of Talladega. As in reality, *ARCA Sim Racing* models the differences—and difficulties—associated with car setup and car control as the venues change. Further, these grip levels have been created using actual tire data provided by Hoosier Tire for the ultimate driving experience, which is to say: If you want to compete, against the AI or HUMINT, you're going to be spending a lot of time selecting this Test Session option.

See the 'A Few Laps at Pocono' section for a detailed description of the complete on-track experience of *ARCA Sim Racing* in terms of game play mechanics and practice techniques.

Race Weekend

When you are ready to hit the track for real, this is probably the best place to start. The options for the 'Race Weekend' can be altered by hitting the 'Options' button at the middle lower portion of the screen. 'Practice', 'Qualifying', and 'Warm-up' sessions are all available should you decide to select them, as well as the number of AI drivers, the extent of the flag rules, and many other options.

Race Online

Here is where the rubber meets the road—racing online against your buddies is one of the best gaming experiences around, and from here you can view the list of available servers to join, have a chat session with your racing buddies, or even host a race. The list of servers can be sorted by left clicking on the heading tabs at the top of the lobby window.

You can join a race simply by clicking on its information line in the lobby window, after which you will be taken to a password login—should there be one—and then to a 'Car Selection' screen. From there, you are taken to the main race interface screen, called the 'Monitor', which you have already seen during 'Testing', and 'Race Weekend' sessions. You don't have to use the same car online as you do for offline, as any statistics you generate for SimStatsLive, for example, will be associated with your particular driver profile and not the car. However, the statistics for the car itself—such as miles driven—will be kept on an individual vehicle basis.

Exit

Selecting this will exit the simulator and return to the Windows desktop.

Chapter Two: Getting Better
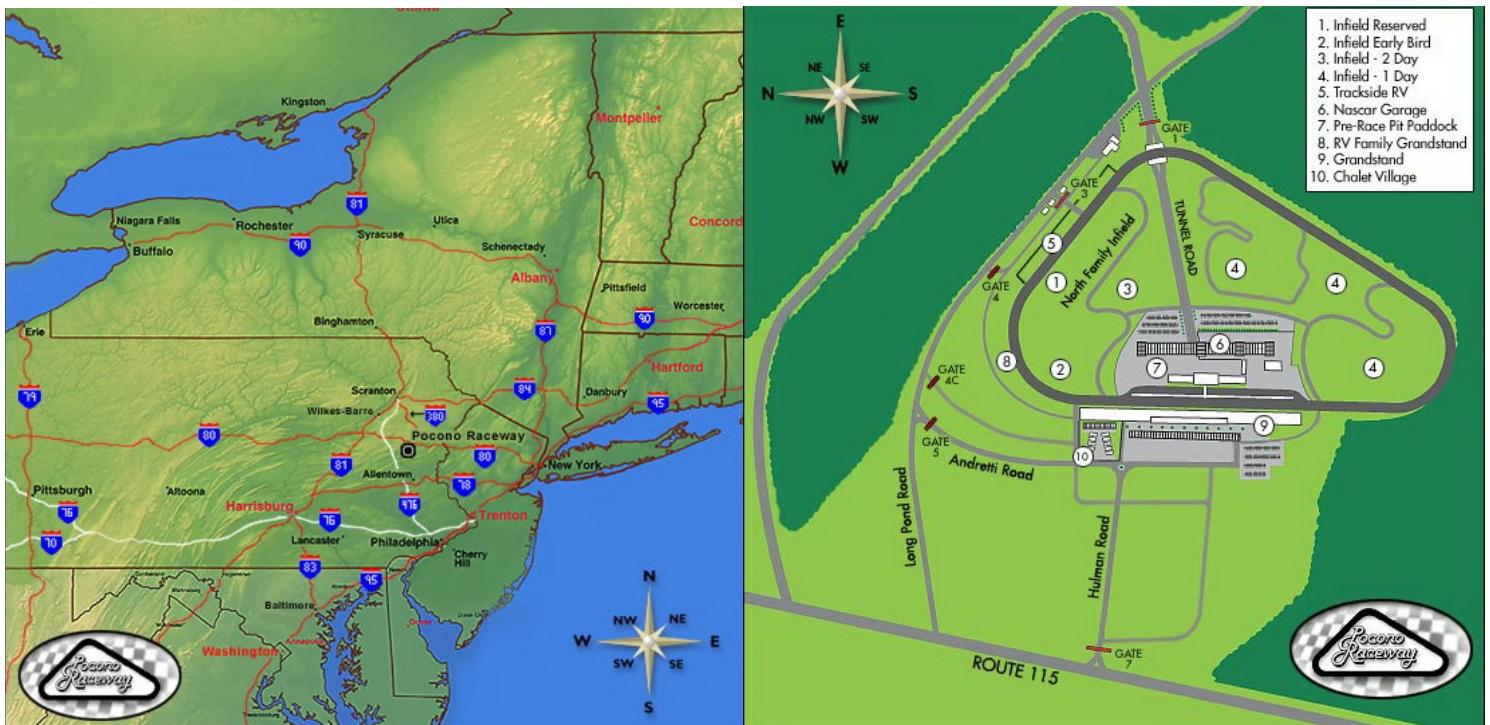
A Few Laps At Pocono

Pocono is what I have chosen to give you a quick-fire tour of what it will take to succeed. Why Pocono? Simply, because of its unique characteristics—as any fan of the sport already knows, you will see examples of drafting, oval, and, believe it or not, road course techniques, on every lap. Often referred to as a 'roval'—that is, a combination of road and oval features—the front straight at Pocono is also unique in that it is not uncommon to see cars going five wide at better than 180mph. The faint of heart need not apply. Especially when the five crack down Turn One where only two-wide is possible; if three of the five don't back down, you can imagine—and sometimes you will see—the mess. Sometimes, they say, even two is 'too' many at Pocono …

The drafting you will see is not the all-out pedal-to-the-metal variety you will encounter at Daytona either, but it definitely plays a role as the cars have 3,500 feet of front stretch to try it out before they have to put on the road course driver hat for the first time and convert all of that forward motion into brake system heat.

Nestled in the mountains north of Allentown, Pennsylvania, Pocono features some of the most beautiful countryside of any track on the ARCA schedule, making it all the more appealing to fans and drivers alike.

But aside from the pretty landscape, Pocono offers a unique challenge to the ARCA driver: Each turn requires a different approach not only in terms of the way you—the driver—will attack them, but also—and crucially—from a car setup point of view. Not only does each turn differ in terms of banking angle, radius, and topography, but, due to the colossal length of the front straight versus the relatively short stretch between turns Two and Three, there is the unique requirement (in the ARCA series) for up-shifting and downshifting in order to get the most out of the lap—and your time.

Pocono is a great place to get a taste of every type of track length, configuration, and layout on the ARCA schedule, and the lessons you will learn here will be crucial as you head into a full-season of ARCA-style racing. Pocono requires a blending of mindsets and strategies from distinct and very different aspects of stock car racing, ovals and road courses. If you're quick here, you'll be quick pretty much everywhere else.

Right! So tighten the straps, secure the Hans Device, and start up the motor—you're going racin'!

To The Track

Select 'Test Session' and then 'Pocono', and after the track has finished loading, you will be presented with the main simulator interface, also known as the 'Race Monitor'. There is a lot of information here, including track conditions, driver times, and access to a fully featured garage area. Have a quick look around, get acquainted with your mechanics, grab a last gulp of your energy drink and, when you are ready, hit the 'Race' button.

You will find yourself in the garage area, with the engine off. In a moment, you will hear the starter kick in, and then the unmistakable grunt of an 800BHP V-8 at idle. Before we navigate to the track, let's have a look around using some of the internal and external views. Tap the key you assigned for looking left or right ('V' and 'N' by default) to have a look around the cockpit. Every switch, gauge, light, and label you see is modeled with intricate attention to detail. Gauges for fuel pressure, water temperature, oil temperature, and pressure, volts, and the ARCA-mandated yellow cockpit indicator that will illuminate whenever a caution flag is thrown are all there. Make sure you know what's what—pounding into Turn One at 180mph is not the time to try and work-out where your oil temp gauge is located!

Looking to the left and right also reveal portions of the seat headrest, as well as the electronics mounted on the dash. Portions of the roll cage are also visible, giving a good idea of the confining nature of the cockpit area. With the mirrors enabled, you can see the cockpit bars reflected in them, obstructing a view to the rear. To your left, on the A-pillar, is a small circular mirror that can prove invaluable as it provides a view with fewer obstructions, albeit with a smaller region of coverage; every little bit, as you will soon discover, helps. Throw in the Spotter feedback, and you will eventually, and intuitively, have a good feel of what is actually going around you far above what the visual cues are giving you. Which is a good thing, because looking left and right, and trying to work out who's where when you're five-wide at 180mph is a quick way to end your career in a way we'd rather not contemplate at this stage …

Tap the 'Page Up' key to activate the Swingman camera. Using the keypad numbers you can swing the view completely around, and you will also be able to zoom in and out. Give that a try now—hit the '4' key to bring the view around the front corner of the car. Now, give the throttle a bit of gas, and note how the car body is rocking back and forth due to the torque of the power plant. Literally, it wants to twist the car in half, and it must be kept in mind when trying to get the most out of your car. The physics model in *ARCA Sim Racing* has been painstakingly and meticulously crafted to mimic the real-life behavior of these beasts, and 800BHP is not something you'll be domesticating any time soon. Now is a great time to begin respecting that power!

Now let's zoom out a bit, and see just where the track entrance is. It is advisable to learn this for each track before leaving the garage for several reasons. First, it's embarrassing to get lost in the garage area (this is a simulator, and you will always find yourself in the garage—not the pit—when you get into your mount), and, second, just pulling out of the garage might land you in front of someone else already in motion. Just like the real garage areas, not looking where you are going here can lead to extra hours in the body shop, and crashing into a HUMINT in the garage area is a quick way to earn a reputation you don't want to have. Hit the '7' key to zoom out, then use the '4' key again to adjust the view so that you have a clear line of sight to the exit gate. Drop the car into first, and—carefully—make your way to the gate. Once you get there, it will be clear which way to turn onto pit lane. Make sure you go the right way, or you may find yourself black-flagged and excluded from the race weekend before you even get onto pit road.

Now that you're rolling, let's remember what you would invariably have been told by your Chief Mechanic before you climbed behind the wheel—words that have been spoken to every rookie in every series in history: We aren't out to set any speed records today, and we definitely don't want to get too aggressive on accurately modeled cold tires. For now, we are going to have a nice and easy lap around one of the most unique tracks in all of motor sports. A Sunday drive—with the kids in the back and eggs in the trunk, okay?

The pit lane exit here can be a bit dicey at times due to the relatively short exit before you have no choice but to enter the track. Some tracks have extensive entryways to the main track, so each case will be different, but at Pocono, a good rule of thumb is to assume someone is coming from behind no matter what! Once you have transitioned to the racing surface, bring the car up to speed, and begin to think about braking point markers you may use, what other drivers—if the test session is not private—are doing around you, what line you think is best through the turns, and just where it is you want to shift.

Personally, I like to get the shifting done before the corner entry, but as the laps wear on, and my confidence grows, I find myself shifting almost at the corner apex, hugging the bottom but remaining well-off the thin—and dangerous—curbing. Each of us will have different preferences—just like the real drivers—but for now, it is a good idea to get a grip on the basics.

By now, you have made—I hope—your way through a warm-up lap or two, and are ready to tackle the track at a more aggressive pace. As any pro' will tell you—and as logic dictates—a track is made up of turns and straights: How you come off the turns will dictate how fast you will be on the straights, and how fast you are on the straights is usually a good indicator of how fast you will be on the lap charts. So let's begin at the start of the lap: Turn One.

Turn one at Pocono is deceptive. The pros on TV make it look like the easiest thing in the world to navigate; the reality, however, is much different. Entry to the corner has a bit of an uphill character to it before dropping noticeably left into the apex. Exit is also not a trivial matter as you are not only headed uphill but there is also a bit of banking tossed in before spitting you out onto relatively level ground. Depending on your exit, and your gear selection, you may or may not need to up shift before the entry to Turn Two. As you exit Turn One, you will notice not only the detailed track environment, but a part of the beautiful Pocono mountain range in the distance. You did? Good—that means you're going too slow!

Turn Two is quite a bit different than Turn One. The 'dive' into the corner is less daunting, and the corner is of a greater radius. What makes this turn tricky, however, is that the banking is noticeably less that of Turn One, not only through the corner, but at the exit as well. As such, you will have to adjust your style to compensate for the change of banking from the previous turn. And just like Turn One, there is plenty to see from the cockpit outside of the racing surface. Again, we have the beautiful mountains in the distance, and a whole lot of RVs on the right hand side, indicative of just how fun this is for the fans as well as the racers!

Only one more turn to go, Turn Three, the most critical turn on the circuit. Get through it quick because it leads us back onto the massive front stretch, and to our lap time—a bad exit here will destroy everything you have done to that point; this is one turn you cannot make a mistake on. Flat, and with very little banking, you will be in third gear on entry as the stretch from Two to Three is just not quite long enough for a gear change. Make sure to brake smoothly on entry to this turn, and get back on the gas as soon as you can because you need to hit the straight patch nice and smooth and straight. Throttle mistakes here can have a nasty tendency of dumping you on the front stretch with the nose pointed the wrong way. Take your time, and learn this corner well; while topographically less complex than Turns One and Two, it is the critical moment of your lap.

Chances are that, by now, you are probably realizing something important: a perfect setup for turns One and Two is probably doing you no favors coming through Turn Three. Or, depending on your style, you're perfect through turns One and Three, but not Two. As in the real sport, compromises must be made as there is no one single 'magic setup' for any track, much less the interesting confines of Pocono. And this is where the driver and team come into the picture, because despite what you may have been led to believe, modern motor racing is a team sport, a blend of mechanical and engineering acumen and driving talent. Making the necessary compromises to the setup—combined with changes to the driving style—is crucial should you want to be competitive.

Back at the garage, and on the 'Monitor', I noticed that I have just run out a 54.950. By left clicking on my driver name in the Standings List, and then right clicking on the highlighted name, all of the lap times that were obtained during my last stint will be shown.

Time for a debrief with the engineers, before the mechanics will get to work making setup changes and adjustments based on my feedback. This is a good time to get a glimpse at the garage area, and a feel for what changes are actually doing for—or against—us.

The Sim Factory has gone to great lengths to provide stable setups (by default) for each track, and you don't need to worry about fine-tuning chassis setups as soon as you get into the driver's seat. It won't be long, however, before you realize that you can be quite a bit faster with an adjustment or two to the setup. Just remember, however, that there is no perfect formula for obtaining the optimum setup for your car; setups are unique to your style, and also to what you want the setup to do for you. A quick qualifying setup may not be ideal for a 500 mile race; and a setup based around a full tank may not be ideal should you decide to take it out with empty tanks for a qualifying run.

Having said that, however, there are some changes we can make right away that should give us a few extra tenths without spending hours in the garage. The reason for this is—as every rookie will have discovered through the ages of motor sport—setups given to the 'newbie' are always 'stable'. And stable is never the quickest way of going racing.

For this particular exercise, I found the car to be a bit on the 'tight' side, or, in other words, the front end of the car did not respond to my steering inputs as much as I would have liked; it didn't 'roll' through the corner, and throttle modulation was required—as in get off the throttle—in order to bring the nose back in line before I hit the outside wall. This is clearly not ideal since time spent off the throttle is time wasted; in an ideal world, you want to have your foot on the throttle for the longest period of time as you can on a lap. To tackle this, I have chosen to remove one round of wedge, or cross weight, from the chassis of the car. This will have the effect of putting less weight on the front right tire, thereby reducing the 'plowing' effect of a tight car. In theory, that is!

Hit the 'Garage 2' tab, and among the many settings found here, you will see the setting to adjust the wedge in the lower middle portion of the screen. I am going to adjust it to negative 2, and see where that leads. Remember—removing wedge will have a tendency to make the car loose, or, susceptible to spinning out at the rear, and adding wedge will tighten the car up, or, making it less likely to spin at the rear, but susceptible to a poor turning radius as the front will slide along the direction of travel as opposed to following the steering inputs. In other words; less wedge will cause the rear to try and catch up with the front; more wedge will mean the car will be more stable, but less able to turn.

Our wedge adjustment made, it's time to hit the track again. And just a note to the rookie, and you'd be well-advised to remember this, as it is a staple to every single setup change you will ever make in your racing career, virtual or real: One setup change at a time! Don't mess with more than one setting at a time, because setup building is about two things—making the change, and testing the result. More than one change will mean you will have no idea which has caused what effect when you're out on the track, and going the wrong way—setup-wise—is a frustrating process that won't win you any applause from your fans—or your mechanics!

Now that you're on the track, we're going to be rather more exacting with our testing: We are going to have a look at some Real-Time data feedback to get an idea of how the car is behaving—before *and* after the tires come to temperature. Before leaving the garage, hit the '6' key on the keyboard, and then cycle through the various LCD pages until you come to the tire monitor page. This page of the LCD will show you the condition and temperature of your tires, as well as your fuel load and estimated amount of laps you can run on that load.

As you make your way down pit road and onto the track, you will notice all the tire indicators are blue, indicating fresh tires with no temperature in them at all. You will also note a thin green bar next to each tire icon; this is an indication of the overall tire wear, and the length of this bar—as well as the color—will let you know just how ragged and worn the tires are. Sometimes, the fuel will last a lot longer than the tires, so make sure you learn the tire wear characteristics at each track for that extra bit of an edge.

You will quickly notice how our wedge adjustment has affected the car, at least in terms of tire temperature. Observe how quickly the right rear tire is heating, relative to the others, as we drive through the corners. That is the effect of our wedge adjustment, since we have placed more of a burden on the right rear tire in terms of chassis weight loading, and the heating rate difference in this tire versus the others lets us know that, as we make our way through these corners, we are riding quite a bit on that one tire. And we will notice something else as well—the rear-end has suddenly become a lot more active; that is, noticeably less 'sticky' than the default setup, requiring some on-the-fly adjustments of driving style in order to not pound the right rear tire into oblivion and, at the same time, keep it from getting out of control well before tire life has been reached!

After a few laps with the single setup change, I found myself obtaining a 55.970 for a best time. I also found that more effort, physical and mental, was required to get the car around due to the need to consciously keep the rear from stepping out, or the right rear tire in particular from overheating too early into the run. Not only did the car turn better, it turned too much, and any advantage that I was personally gaining due to a better turn rate came at the expense of too much opposite direction of travel input in order to maintain my comfort level. A loose race car is a very unnerving thing, and, as they say, friends don't let friends drive loose.

Although I did not see any time improvement, a loss, actually, it was in fact the case that the car was simply too difficult to drive, and it was interesting to note that just because a lap time is reproducible, it doesn't mean the car is going to feel the same doing the same time.

An important thing we have learned is just how dramatic an effect on car behavior a single change can have. I wish I knew the secret path to setup glory, as I would love to share it, but the fact is we all have different 'comfort' levels: That is, what one of us may find as an extremely loose car, another may find to be a perfectly balanced car. My advice, when you're tinkering with setup changes, is to 'save' often, and develop your own naming system for your setups as you will most likely want an 'on the edge' setup for qualifying, and a more reasonable and stable setup for the race. Ultimately, it is up to you, and *ARCA Sim Racing* is the perfect playground to develop your skills as a top level oval driver.

I think I will take a bit of a break to calm my nerves before putting that wedge back to the normal side of sanity and attempting to shave some time from my extremely modest pace. Not only that, but this is a great opportunity to check out some of the broadcast type camera views built into *ARCA Sim Racing*.

At the 'Monitor' screen, left click in the viewing area to give that window a full screen format. Hit the '+' key to select a driver who is currently turning a lap on the track, and then tap the 'Page Up' key to view this driver specifically. The camera angles will change automatically as the driver navigates around the track, providing a realistic view of every aspect of their driving. Next, as the driver enters a corner, tap the 'End' key, and you will notice that the camera is no longer tracking the driver, but has become stationary—now, move the mouse! This is an interesting view, and you can swing the camera around, as well as up and down, and any other way you can imagine: If you can move the mouse, you can move the camera. Earlier in the manual, I mentioned several unmapped game commands, and several of these are modifiers of some of the camera views. Keep tapping the 'End' key, and you will automatically be taken to stationary cameras all over the track, all of which provide for strikingly realistic vantage points.

What is the point of us in this section, you ask? It is often the case that, once you step out of your car and watch your lap from the outside, that you are able to gauge problems with your setup, or your lines, or your driving style. So if you're off the pace, take a look at the pace setting cars, and the compare to your lines—chances are you will be able to determine where you're losing time. Figuring out why, though, is when you'll have been promoted from rookie to bona-fide ARCA Sim Racer …

Chapter Three: The ARCA Sim Racing Tracks

TALLADEGA SUPERSPEEDWAY

TRACK INFORMATION

OWNERS: Int'l Speedway Corporation
LOCATION: Talladega, AL
TRACK RECORD: 46.614 - 205.432 MPH
DRIVER: Bill Venturini 1987
LENGTH: 2.66 Mile
TYPE: Tri-Oval
TURNS: 33 Deg
TRI-OVAL: 16.5 Deg

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SALEM SPEEDWAY

TRACK INFORMATION

OWNERS:
LOCATION: Salem, IN
TRACK RECORD: 16.785 - 119.035 MPH
DRIVER: Greg Bradberry 1994
LENGTH: .555 Mile
TYPE: Oval
TURNS: 33 Deg

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POCONO RACEWAY

TRACK INFORMATION

OWNERS: Mattioli Family
LOCATION: Long Pond, PA
TRACK RECORD: 52.678 - 170.849
DRIVER: Kyle Busch - 2003
LENGTH: 2.5 Mile
TYPE: Tri-Oval
TURN ONE: 10.4 Deg
TURN TWO (Tunnel): 8 Deg
TURN THREE: 6 Deg

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USA INTERNATIONAL SPEEDWAY

TRACK INFORMATION

OWNERS:
LOCATION: Lakeland, FL
POLE RECORD: 22.070 - 122.338 MPH
DRIVER: Bobby Santos 2007
LENGTH: .750 Mile
TYPE: Oval
BANKING: 14 Deg

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MILWAUKEE MILE SPEEDWAY

TRACK INFORMATION

OWNERS: State of Wisconsin
LOCATION: West Allis, WI
TRACK RECORD: 30.016 - 119.936 MPH
DRIVER: David Ragan 2005
LENGTH: 1 Mile
TYPE: Oval
TURNS: 9.25 Deg

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POCONO RACEWAY

TRACK INFORMATION

OWNERS: Mattioli Family
LOCATION: Long Pond, PA
TRACK RECORD: 52.678 - 170.849
DRIVER: Kyle Busch - 2003
LENGTH: 2.5 Mile
TYPE: Tri-Oval
TURN ONE: 10.4 Deg
TURN TWO (Tunnel): 8 Deg
TURN THREE: 6 Deg

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IOWA SPEEDWAY

TRACK INFORMATION

OWNERS:
LOCATION: Newton, IA

TRACK RECORD: 22.933 - 137.357 MPH
DRIVER: Steve Wallace 2006

LENGTH: .875 Mile
TYPE: Tri-Oval
FRONTSTRETCH: 10 Deg
BACKSTRETCH: 4 Deg
TURNS: 12-14 Deg compound

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KANSAS SPEEDWAY

TRACK INFORMATION

OWNERS: Int'l Speedway Corporation
LOCATION: Kansas City, KS

TRACK RECORD: 31.323 - 171.162 MPH
DRIVER: Justin Marks 2007

LENGTH: 1.5 Mile
TYPE: Tri-Oval
FRONTSTRETCH: 10.4 Deg
BACKSTRETCH: 5 Deg
TURNS: 15 Deg

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DUQUOIN STATE FAIRGROUNDS

TRACK INFORMATION

OWNERS: Illinois State Fairgrounds
LOCATION: DuQuoin, Illinois

POLE RECORD: 33.273 - 108.196 MPH
DRIVER: Brian Tyler 2005

LENGTH: 1 Mile
TYPE: Semi-Banked Oval

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DAYTONA INTERNATIONAL SPEEDWAY

TRACK INFORMATION

OWNERS: Int'l Speedway Corporation
LOCATION: Daytona, FL

POLE RECORD: 44.953 - 200.209 MPH
DRIVER: Bill Venturini 1987

LENGTH: 2.5 Mile
TYPE: Tri-Oval
TRI-OVAL: 18 Deg
STRAIGHTS: 3 Deg
TURNS: 31 Deg

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Chapter Four: The Ins'n'Outs Of ARCA Sim Racing
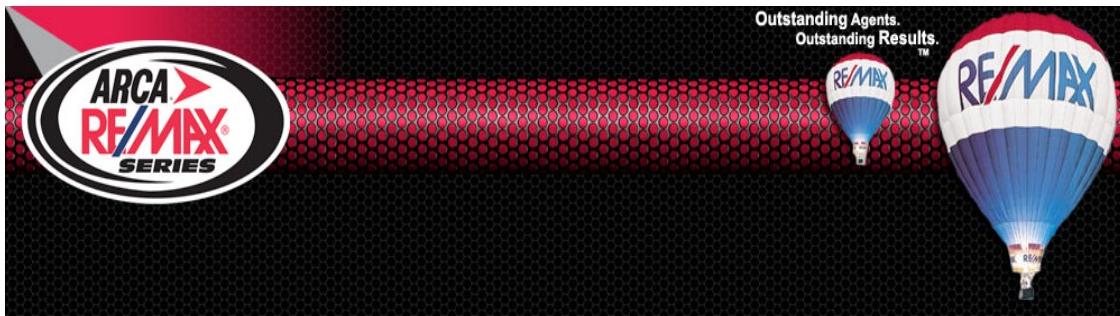
ARCA—Consistency Wins Championships

Points are awarded by several rules, and the official Points Rules (for the 2007 season) can be found below, exactly as they are on the ARCA RE/MAX website. As you can see, if you want that championship trophy at the end of the year, you are going to need to be consistently at the top all the way through the season.

Even a streak of several wins in a row can be dampened by a couple of DNFs, and you may find yourself in the unenviable position of needing another driver to run into a stretch of bad luck. It is always best to 'control your destiny', because odds are that other guy may just have the most lucky season of his career and win the points championship not due to sheer number of wins, but from simply finishing every race, showing the consistency it takes for a serious championship effort.

Long story short—every point matters, and it is definitely in the best interest of the driver to continue whenever possible should things go south in the race. If you get collected in an accident, but the car is still drivable—perhaps the suspension is only slightly bent, hurting only your time around the track, but not your ability to drive it—get out there, grit your teeth, and finish up the race. Who knows, the leader might blow a motor with 10 laps to go.

Here then is the points system that governs the highly competitive world of ARCA Racing.

ARCA RE/MAX Series Point System Explanation

—Twenty-five points awarded upon pre-entering and competing

—Finishing positions: Points begin at 200 for first place, and fall in 5-point increments with each position as follows: 1st: 200; 2nd:195; 3rd: 190; 4th: 185; 5th: 180, and so on down to 41st, the final points-scoring position

—Qualifying points: 1st: 15; 2nd: 10; 3rd: 5. No other positions receive qualifying points

—Five points awarded to any official lap leader

—Five additional points awarded to the leader of the most laps

—Bonus points: 250 points awarded upon entering and competing in each pre-designated five-race leg of the overall schedule. In other words; if you compete in the first five races; you will receive the 250 point bonus at the conclusion of the five-race leg. If, for any reason, you miss one or more of the five, then you will not receive the 250 point bonus. The same would also be true of the second five-race leg: events six through 10, and so on

Note: If the sum of events in any given year does not add up in factors of five, the 250 point bonus will also be awarded for the remaining races. In other words, if the schedule should, for example, include 21, 22, 23, or 24 events, there will be a 250 point bonus attached for the remaining races *provided* drivers compete in all of them, whether it is one, two, three, four … or more. As in the case of the 2003 season (22 races), drivers must compete in the final two events to pick up the 250 point bonus. The same would be true if the schedule had 26, 27, 28, or 29 events, and so on. All bonus points attached immediately following each pre-designated leg. Why the bonus points? It can encourage, from time to time, full-time participation.

While not as straightforward as a simple points table that awards by position only, the ARCA sanctioning body has built in incentives for, literally, showing up to the race. A bit complicated, perhaps, but the incentives spice things up a bit. And if the past Daytona ARCA RE/MAX race was any indication—70-plus drivers qualifying for 43 positions—it is difficult to argue against the logic.

Example Logitech G-25 Controller Button Mappings

The following photograph illustrates an example of Mapping on the Logitech G-25 wheel. Views, gear changes, pit strategy, driver statistics, and car information can all be obtained without the need for keyboard use while driving. Note: Holding the left and right view commands at the same time, in this case the paddles, will give a rearview look, so try and map them where you can easily press both simultaneously: This will serve you well in your sim-racing career!

Cockpit Tour—How The Gauges Are Used For Fine-Tuning Speed

Turn the page and take a look at your cockpit: Memorize where everything is, and what teach gauge represents because in the heat of battle is not the time to start wondering where your oil-temp gauge is located!

—Caution Light: This light will illuminate at the same time the yellow flag is displayed by track officials. By placing a light in the cockpit, there is no question as to the conditions on the track, regardless of their location relative to the driver. So if this is yellow, be prepared for some evasive action!

   —Water Temperature: Keep an eye on this gauge to aid in the fine-tuning of the grille tape you'll be using (higher grille tape means more 'grip' since less air will be sucked into the motor, and forced over the car which, in turn, will push the car down onto the road). High ambient temperatures and too much grille tape, however, will quickly lead to your motor overheating and eventually exploding, so keep a keen eye on this during your testing and practice sessions. Keep it around 220–230 for optimal operation.

   —Fuel Pressure: If this drops below 9 PSI, start looking for the gas station! Make sure to do some fuel runs at every track to learn the consumption numbers. Nothing can make—or break—late race runs at victory like an empty fuel tank. And remember; nothing wastes fuel like a good set of brakes, so make sure you're easy on the anchors!

   —Tachometer: You're going to want to make sure you're not hitting the rev' limiter at the end of the longest straight, and the tachometer is just the gauge to fine-tune that aspect of the gearing ratios. The tachometer is also critical for the purpose of maintaining the pit road speed limit as you can use the speedometer setting (keyboard '5' by default) to check your RPMs at

45mph in second gear, for example. Speeding in pit lane is a penalty that will pretty much ruin your day in a hurry.

   —Oil Temperature: Similar to the precious water cooling system, the oil temperature must also be observed for possible overheating of the engine. Keep it around 240F for optimal operation.

   —Oil Pressure: The oil pressure will fluctuate during normal use, but at high RPM, look for a reading of about 70 PSI. If you notice large deviations from this under racing conditions, take a look in-back because chances are there may be a giant trail of smoke following you, indicating not only the true nature of your predicament, but a nice spot for a BBQ!

   —A-Pillar Mirror: This is a small mirror used by many drivers with the view (sorry) of giving them a much better view to their left, or, 'inside'. But be careful to rely too much on this, as this view is much smaller, circular, and distorted than real-life. Use it for checking things out-back, but don't plan a super precision maneuver trusting only this reflection.

   —Rearview Mirror: A large mirror situated in a location similar to a passenger car, this mirror is, in an ARCA stock car, heavily obstructed by the extensive roll cage within the car. However, the mirror is not without use as you definitely can tell when someone is crawling up your bumper— just in case you missed the bump-draft. Whether keeping your position at a drafting track, or trying to help a team mate advance, remember to glance at this mirror when you can. Taken with spotter cues, there is quite a bit of information to be had regardless of the poor visibility characteristics for the driver in a modern day stock car cockpit.

   —Volts: You need juice to fire one of these cars up, and juice to keep it going. Look for 13-14 volts here under normal race conditions as an indication that the charging system is in good shape.

Flags

—Green Flag: This flag is displayed at the start of every race, or to indicate a re-start after a caution or red flag period.

—Yellow Flag: This flag is displayed whenever race officials determine the conditions on the track to be too hazardous to race. This could be for an accident, or, as is often the case, some sort of debris that has found itself onto the racing surface.

—Black Flag: If you see this, officials have determined that you need to get off the track and fix whatever is wrong with your car. Ignore this flag and risk disqualification.

—Blue Flag With Yellow Stripe: If you see this one in the upper left hand corner, you need to move aside as there is faster traffic coming up from behind. On the other hand, if you are that faster traffic, the AI of *ARCA Sim Racing* should move aside for you! HUMINT opposition may vary …

—Checkered: The one we all want to see; catch this flag first, and you just caught the race!

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ARCA SIM RACING 08 - ARCA RE/MAX Series
LEAD PRODUCERS
Nick Steelman
Robert Coulter

PRODUCERS
William "Zippy" Zimmerman
Mark Carter
Chris Coulter
Mike Rohr
Ricky Sanders

PHYSICS DESIGN
Robert Coulter
Nick Steelman
Michael Borda
Dennis "Boden" Rickard
Josh Buckwheat

TRACK DESIGN
Michael DiPonio
Josh Buckwheat

GRAPHICS/TEXTURE ARTISTS
Michael DiPonio
Josh Buckwheat
Robert Coulter
Nick Steelmam
Justin Wilkinson
Keith Bishop

CAMERA DESIGN
Robert Coulter
Michael Borda
Chris Coulter

SOUND DESIGN
Robert Coulter
Nick Steelman

CAR VIEWER DESIGN
Fred Anderson

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TECHNICAL ADVISORS
Michael McDowell
Jeremy Clements
Justin Allgaier
Kevin Swindell
Ricky Sanders
Brandon Whitt
Willie Allen
Brad Coleman
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'BUMP-DRAFT' USER GUIDE

Words: Bob Simmerman
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'Hot Chopps'
Created by and Courtesy of The Nick Steelman Band

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